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Maintenance

**AFMC ACTUARIAL AND MATHEMATICAL
PROGRAM**

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This instruction implements AFMCPD 21-1, *Managing Aerospace Equipment Maintenance*. It updates guidelines for actuarial analysis support as applicable to the various depot maintenance business area facets, and describes the associated objective and responsibilities. This instruction is applicable to the factors of production detailed in AFMCI 21-105, *Depot Maintenance Work Measurement*, AFI 21-103, *Equipment, Inventory Status, and Utilization Reporting*, and other depot maintenance guidance. It applies to all AFMC Depot Maintenance Activity Group (DRAG) organizations, which produce depot products, or services. This instruction does not apply to the Air Force Guard or US Air Force Reserve units and members.

SUMMARY OF REVISIONS

Updates the areas of applications, with focus on the depot maintenance arena with further emphasis on the factors of production; namely: labor, inventory flow days, etc. The emphasis and application of the actuarial science is intended to result in benefits ranging from development of more accurate targets to better forecasting of standard labor hours.

1. Objectives.

- 1.1. Refine and improve the depot maintenance processes through the use of actuarial and related mathematical techniques.
- 1.2. Refine and improve the techniques for the handling of various depot maintenance data used for analysis.
- 1.3. Provide actuarial analytical support in the areas of maintainability factors such as maintenance downtime, logistics flowdays and delay time, etc. as well as maintenance labor-hour factors such as maintenance manhours per system operating hour, maintenance manhours per maintenance action, etc.

1.4. Improve analytical decision tools used in determining impacts of alternative policies and procedures.

2. Scope.

2.1. This instruction pertains to actuarial and mathematical applications to programs used in depot maintenance. Major programs include data included in the DMAG data warehouse, ancillary systems such as inventory tracking system, awaiting parts and backorder systems, labor-hours systems, etc.

3. Implementation .

3.1. The objectives set forth in this instruction will be accomplished by the depot maintenance actuarial. The actuarial should possess skills in not only actuarial science, but skills in mathematics and operations research as well. Likewise, the person should possess sufficient experience to apply these skills to depot maintenance.

3.2. The actuarial is charged with the responsibility of identifying areas that are beneficial for study, conducting the studies and analysis, reporting findings to the depot divisional management, and obtaining approval for, and implementing new methodologies and processes that result from these studies.

4. Responsibilities.

4.1. Provides central management and planning for all actuarial related studies and analysis.

4.2. Proposes new study areas geared at improving/enhancing the depot maintenance business area.

4.3. Develops and maintains actuarial factors, as applicable, to selected depot maintenance factors (e.g., labor efficiencies, etc.)

4.4. Constantly evaluates the effectiveness of actuarial factors as they pertain to the forecasting of depot maintenance factors of production, etc.

4.5. Prepares and approves all necessary direction for actuarial and related mathematical applications.

4.6. Reviews and approves all specifications for new actuarial or related mathematical systems or for improvement or extension of existing systems.

4.7. Initiates, reviews, approves, and manages contractual research requirements regarding actuarial mathematics.

4.8. Initiates and conducts research development and evaluations of actuarial analyses and forecasts as applicable.

4.9. Responsible for training as necessary and dissemination of actuarial techniques to any/all depot maintenance personnel as necessary.

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